MCP SERVER | NO CODE | CLOUD HOSTED

Minimum Order Quantity Calculator MCP

Manage inventory fulfillment and pack efficiency with your AI agent.

Minimum Order Quantity Calculator MCP handles the math behind supply chain fulfillment. It lets your AI client calculate the exact number of packs needed for any order, check for underfill risks, and measure waste ratios. Instead of manual calculations, your agent uses these tools to ensure order accuracy and logistics efficiency based on your specific pack configurations.

A+ Quality Score 100/100

logistics | inventory | fulfillment | supply-chain | order-management

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vinkius.com/en/ai-agent-connect/minimum-order-quantity-calculator

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Minimum Order Quantity Calculator MCP

4 tools available
Cloud-hosted on Vinkius

You can stop manually calculating pack counts and waste ratios. This MCP acts as a bridge between your supply chain requests and your standardized pack configurations. When you're managing inventory, your AI agent can use these tools to ensure orders are never under-delivered. You can check if a requested quantity fits within product bounds or if it will result in excessive unused units. It's built to handle the friction between raw quantity requests and the reality of physical pack sizes, making it easier to plan shipments and maintain lean inventory levels.

Core Capabilities

01 — Pack Requirement Calculation

Your agent calculates the exact number of packs to fulfill a specific order volume.

02 — Underfill Risk Assessment

The AI checks if a requested amount matches standard pack sizes to avoid shortages.

03 — Waste Ratio Measurement

Your agent identifies how many extra units are shipped relative to the order request.

04 — Order Bound Validation

The AI verifies that requested quantities stay within product-specific pack limits.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/minimum-order-quantity-calculator** — connect your AI agent in three steps.

01 Connect your MCP-compatible client to Vinkius.

02 Provide your pack configurations and order quantities to your AI agent.

03 The agent calls the necessary tools to perform the calculations.

04 Receive direct answers regarding pack counts, risks, or efficiency.

Connect the MCP to your client and start running logistics math through your AI agent.

Built For

This MCP is for professionals managing physical goods and supply chain logistics.

Inventory Managers

They hand off order volume data to the AI to determine necessary stock levels.

Logistics Coordinators

They use the AI to check pack compatibility and shipping efficiency.

Supply Chain Analysts

They use the tool to measure waste and optimize pack configurations.

What Changes When You Connect

01	Prevents under-delivery by calculating exact pack requirements.
02	Identifies waste by measuring unused units in every order.
03	Validates order bounds against specific product configurations.
04	Reduces manual math errors in fulfillment planning.

Real-World Applications

Fulfillment Planning

Calculate how many full packs to pull from the warehouse to meet a customer's specific unit request.

Waste Reduction

Analyze order efficiency to see if certain quantities cause too much surplus inventory.

Order Validation

Ensure a customer's requested amount doesn't violate minimum or maximum pack constraints.

Inventory Optimization

Use pack efficiency data to adjust standard pack sizes for better alignment with demand.

Patterns to Avoid

Ignoring pack constraints

❗ AVOID

You tell your agent to fulfill an order for 50 units without checking if your packs come in sets of 12. This leads to shipping errors or shortages.

✓ INSTEAD

Run the quantity through `validate_pack_compatibility` first to ensure the request fits your specific product configurations.

Overlooking surplus waste

AVOID

You approve a large order that requires shipping three extra full packs just to meet a small unit deficit. This creates massive unnecessary inventory.

✓ INSTEAD

Use `get_pack_efficiency` to see exactly how many unused units you'll be shipping relative to the actual request.

Guessing fulfillment needs

AVOID

A logistics coordinator manually estimates how many boxes to pull from the warehouse based on a rough unit count.

✓ INSTEAD

Let the agent determine the exact number of full packs needed by using `calculate_required_packs`.

The Right Fit

Connect this MCP if you manage physical inventory where items move in standardized packs. Do not connect it if you deal exclusively in digital goods or loose, non-standardized units. The decision rests on whether your fulfillment depends on fixed pack sizes.

Minimum Order Quantity Calculator 4 Tools

These tools bridge the gap between raw quantity requests and physical pack constraints. They handle the math for pack counts, waste ratios, and order bounds.

#	TOOL	DESCRIPTION
01	`calculate_underfill_risk`	Use this to see if a requested quantity can be met exactly by your standard pack sizes.
02	`get_pack_efficiency`	This tool measures how much waste occurs by comparing unused units to the requested quantity.
03	`validate_pack_compatibility`	This tool checks if a requested quantity falls within the acceptable bounds of a product's pack configuration.
04	`calculate_required_packs`	This tool determines the total number of full packs you need to satisfy a specific quantity request.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U How many packs of size 12 do I need to fulfill an order of 50 units?

You will need 5 packs of 12, providing a total of 60 units, which includes 10 surplus units.

U Is an order of 100 units valid if the minimum is 50 and the maximum is 150?

Yes, the order of 100 units is valid as it falls within the allowed range.

U Will an order of 24 units be an exact match for packs of size 6?

Yes, 24 is a perfect multiple of 6, so it is an exact match with no remainder.

Frequently Asked Questions

01 **How does this MCP help with inventory fulfillment?**

It allows your AI agent to calculate the exact number of packs required to meet a quantity request, ensuring you don't under-deliver.

02 **Can I use this with Claude or Cursor?**

Yes, you can connect this MCP to any MCP-compatible client like Claude, Cursor, or Windsurf.

03 **How do I check for order waste?**

You can use the get_pack_efficiency tool to measure the ratio of unused units to the requested quantity.

04 **What happens if an order doesn’t match my pack size?**

The calculate_underfill_risk tool will identify if a requested quantity can be met exactly or if it will result in a mismatch.

05 **Does this MCP handle product constraints?**

Yes, the validate_pack_compatibility tool checks if a quantity falls within the allowed bounds of a product's configuration.

06 **How does the tool handle quantities that don’t fit perfectly into packs?**

The `calculate_required_packs` tool uses a fulfill-or-exceed logic, rounding up to the nearest whole pack to ensure the requested quantity is fully met.

07 **Can I check if an order is within allowed limits?**

Yes, you can use the `validate_pack_compatibility` tool to check if a requested quantity falls within the minimum and maximum bounds defined for a product.

08 **How is efficiency measured?**

Efficiency is calculated using `get_pack_efficiency`, which provides the ratio of requested units to the total units provided by the required packs.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"minimum-order-quantity-calculator": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Minimum Order Quantity Calculator is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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